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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,338	07/23/2003	Hartwig Schlesiger	CH-7748/WW-5616	9144
34947	7590	09/20/2004	EXAMINER	
LANXESS CORPORATION PATENT DEPARTMENT/ BLDG 14 100 BAYER ROAD PITTSBURGH, PA 15205-9741			HENRY, MICHAEL C	
			ART UNIT	PAPER NUMBER
			1623	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/626,338	<b>Applicant(s)</b> SCHLESIGER ET AL.	
	<b>Examiner</b> Michael C. Henry	<b>Art Unit</b> 1623	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                                     |

**DETAILED ACTION**

Claims 1-11 are pending in application

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 8 recite the phrase “after if appropriate” in step (e) of each claim. However, the phrase renders the claims indefinite because it is unclear when it is appropriate or not appropriate to perform step (e) or the procedures set forth in step (e). More specifically, this phrase is vague and indefinite and, one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Dannhorn et al. (EP 1180526 A1).

Claim 1 is a product-by-process claim wherein the applicants claims, "Cellulose derivative having gel-like rheological properties in aqueous solution characterized in that

a) cellulose is alkalized with aqueous alkali metal hydroxide in the presence of a suspension medium,

b) the alkalized cellulose is reacted with one or more alkylene oxides,

c) then reacted with an alkyl halide present in the suspension medium

d) subsequently or simultaneously the alkalized cellulose is reacted with a crosslinking agent in an amount of 0.0001 to 0.05 eq, where the unit "eq" represents the molar ratio of crosslinking agent relative to the cellulose anhydroglucose unit (AGU), and

e) after if appropriate further addition of alkali metal hydroxide and/or alkylating agent, the resultant irreversibly crosslinked cellulose derivative is separated off from the

resultant reaction mixture, optionally purified and dried." Dannhorn et al. disclose applicant's cellulose derivative (methyl hydroxypropyl cellulose derivative) (see abstract). A quotation from the MPEP (Manual of Patent Examining Procedure, 8 ed., August 2001) pertaining to Product-by-Process Claims is given below in order for further corroborate the reason for the aforementioned rejection. The quotation states that "PRODUCT-BY-PROCESS CLAIMS ARE NOT LIMITED TO THE MANIPULATIONS OF THE RECITED STEPS, ONLY THE STRUCTURE IMPLIED BY THE STEPS "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even

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though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).” Dependent claims 2 and 3, which are drawn to cellulose derivatives of claim 1 are also encompassed by the aforementioned rejection. Dependent claims 4-7 are drawn to said cellulose derivative with specific properties are also anticipated by Dannhorn et al. (see abstract). It should be noted that since Dannhorn et al.’s cellulose derivative (methyl hydroxypropyl cellulose derivative) is the same as applicant’s claimed cellulose derivative (see claim 7), then Dannhorn et al.’s cellulose derivative should inherently possess or exhibit the same properties as applicant’s cellulose derivative. Furthermore, it should be noted that cellulose derivatives, especially cellulose ethers are gelling agents (i.e, they have gel-like rheological properties in aqueous solution).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dannhorn et al. (EP 1180526 A1) in view of Groitzsch et al. (US 6,251,479 B1).

In claim 8, applicant claims a “Process for preparing a cellulose derivative according to claim 1, comprising a) alkanizing cellulose with aqueous alkali metal hydroxide in the presence of a suspension medium, b) reacting the alkalized cellulose with one or more alkylene

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oxides, c) then reacting with an alkyl halide present in the suspension medium d) subsequently or simultaneously reacting the alkalized cellulose with a crosslinking agent in an amount of 0.0001 to 0.05 eq, where the unit "eq" represents the molar ratio of crosslinking agent relative to the anhydroglucose unit (AGU) of the cellulose used, and e) after if appropriate, further addition of alkali metal hydroxide and/or alkylating agent, separating off the resultant irreversibly crosslinked cellulose derivative from the reaction mixture, optionally purifying and drying the irreversibly crosslinked cellulose derivative." Dependent claims 9-11 are drawn to a process according claim 8, characterized in that, in step a), the cellulose is alkalized using aqueous alkali metal hydroxide in the presence of a suspension medium which comprises alkyl halide in the specific amounts (claim 9), the use of the alkyl halide, methyl chloride (claim 10) and the use of the crosslinking agent dissolved in methyl chloride or a methyl chloride/dimethyl ether mixture (claim 11).

Dannhorn et al. disclose a method of preparing cellulose derivatives (including methyl hydroxypropyl cellulose derivative) (see abstract). In addition, Dannhorn et al. disclose that the cellulose is alkalized using aqueous alkali metal hydroxide (aqueous NaOH) in the presence of a suspension medium (agent) which comprises the alkyl halide, methyl chloride, in the same amounts ( $\geq 0.2$  equivalents alkyl halide per anhydroglucose units) (see abstract).

Groitzsch et al. disclose that cellulose derivatives including methyl hydroxypropyl cellulose (methyl hydroxypropyl cellulose) can be crosslinked with cross-linking agents which include, epichlorohydrin (see col. 5, lines 37-54). In addition, Groitzsch et al. disclose that the cellulose derivatives can be used in personal hygiene articles such as diapers, sanitary napkins and tampons.

The difference between applicant's claimed method and the method of Dannhorn et al. is that applicant crosslinks the alkalized cellulose with a crosslinking agent (e.g. epichlorohydrin). However, Groitzsch et al. disclose that cellulose derivatives such as methyl hydroxypropyl cellulose can be crosslinked with suitable cross-linking agents such as epichlorohydrin (see col. 5, lines 37-54).

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made to have used the method of Dannhorn et al. to produce cellulose derivatives such as methyl hydroxypropyl cellulose and to crosslink the cellulose derivatives, since Groitzsch et al disclose that cellulose derivative such as methyl hydroxypropyl cellulose can be crosslinked with agents such as epichlorohydrin to be used in personal hygiene articles such as diapers, sanitary napkins and tampons.

One having ordinary skill in the art would have been motivated, to use the method of Dannhorn et al. to produce cellulose derivatives such as methyl hydroxypropyl cellulose and to crosslink the cellulose derivatives, since Groitzsch et al disclose that cellulose derivative such as methyl hydroxypropyl cellulose can be crosslinked with agents such as epichlorohydrin to be used in personal hygiene articles such as diapers, sanitary napkins and tampons.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8:30 am to 5:00 pm; Mon-Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be

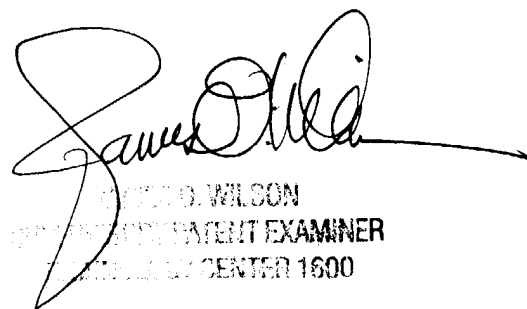
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reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-1235.

MCH

September 9, 2004.



JAMES D. WILSON  
SENIOR PATENT EXAMINER  
TECHNICAL CENTER 1600